

U.S. Patent Application Serial No. 10/829,018
Reply to Office Action dated July 12, 2006

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Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A wafer carrier locking device, comprising:

a wafer carrier, the wafer carrier having seated thereon a plurality of wafers seated thereon;

a main equipment to execute a semiconductor manufacturing process, ~~which is a wafer cleaning process, a wafer etching process, etc., when~~ wherein the wafers seated on the wafer carrier are fed to the main equipment by a multi-joint robot;

an auxiliary equipment, comprising:

a carrier sensor to detect a seated state of the wafer carrier relative to a base member;

a wafer sensor to detect a number and positions of the wafers seated on the wafer carrier, when the wafer carrier is seated on the base member; and

the base member having a plate shape, with a plurality of positioning blocks being provided at predetermined positions of the base member to allow the wafer carrier to be seated at a desired position on the base member; and

a locking unit provided at a front portion of the base member to prevent the wafer carrier from being undesirably moved, when the wafer carrier is seated on the base member during the semiconductor manufacturing process of the main equipment, comprising:

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a control board to output a locking signal when a start signal of the main equipment is input to the control board through the auxiliary equipment, and to output an unlocking signal when an end signal of the main equipment is input to the control board through the auxiliary equipment, during the semiconductor manufacturing process of the main equipment;

an air solenoid valve to drive a pneumatic actuating unit in response to the locking signal or unlocking signal when the locking signal or unlocking signal is input from the control board to the air solenoid valve, thus controlling a flow of pressurized air;

a cylinder actuator to extend or retract according to the flow of the pressurized air controlled by the air solenoid valve; and

a L-shaped hooker mounted to an end of the cylinder actuator to lock or unlock the wafer carrier seated on the base member, according to the extending or retracting motion of the cylinder actuator, wherein the L-shape hooker locks a lower surface of the wafer carrier seated on the base member.

2. (Cancelled)
3. (Original) The wafer carrier locking device according to claim 1, wherein the locking unit comprises a pair of locking units which are installed at positions around front and rear portions of the wafer carrier seated on the base member.
4. (Cancelled)